INFORMATION LETTER

Not for Publication — NATIONAL CANNERS ASSOCIATION — For Members Only

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Tentative Agenda for Meeting Of N.C.A. Board of Directors

Reports on the status of the Association's buildings program will be prominent on the agenda of the Board of Directors meeting in Washington on June 7, the day before the new headquarters building is dedicated.

The tentative agenda calls for consideration of the following:

1. Accomplishment, the completion of the new headquarters building, and the progress on the West Coast laboratory building.

2. The status of N.C.A. finances, including expenditures to June 1 as compared with the budget, together with any recommendations that may be made by the Finance Committee with respect to budget changes. A report also will be made on the collection of dues and status of membership.

3. Because of recent inquiries about membership for foreign firms which are subsidiaries of members, this subject may be reviewed.

4. Plans for the Association's labeling program will be reported by the Labeling Committee.

5. Plans for the 1951 Convention will be reported and suggestions for time and place of future conventions will be discussed.

6. Reports will be made on a number of current industry problems, including the Grocery Trade Practice hearings being conducted by the Federal Trade Commission; the Food and Drug hearings on pesticide tolerances; the Food and Drug hearings on mushrooms, corn, and tuna; and the hearings in connection with reciprocal trade agreement negotiations.

7. Special reports also will be made on the New York Gross Receipts Tax and the Philadelphia General Business Tax.

Committee Appointment

W. D. Tyler, Curtice Brothers Co., Rochester, N. Y., has been appointed to the Technical Advisory Committee of the Association's Raw Products Committee by J. D. Barnard, Chairman of the latter Committee.

Dr. Lehman of FDA Classifies Pesticides at Tolerance Hearing

Dr. A. J. Lehman, Chief of the Division of Pharmacology of the Food and Drug Administration, on May 22 presented testimony classifying chemicals into six groups, according to his opinion of their public health hazard. His testimony opened Part B of the FDA tolerance hearings, which dealt with chemicals named in Part A which are poisonous or deleterious to public health and for which tolerances must necessarily be established. Part A dealt with the necessity for use of certain insecticides and evidence under this section was completed on May 22 just prior to Dr. Lehman's appearance.

Dr. Lehman defined what he considers to be the difference between "poisonous" and "deleterious," stating that the definition of the former would imply that any chemical which caused permanent damage and ultimate death to warm-blooded animals was considered poisonous, whereas any chemical which created adverse physiological effects in the body of warm-blooded animals, without ultimate death, would be considered deleterious.

Group I—Dr. Lehman placed a number of chemicals, such as the diluents, i.e., talc, clay products, pyrophyllite, fuller's earth; the magnesium carbonates, sulphates, gypsum and the various forms of sulphur in the first group which he considers have so little toxicity that any residues which may be

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Wage-Hour Administration Transferred to Labor Secretary

Reorganization Plan No. 6, transferring to the Secretary of Labor all of the functions of the Administrator of the Wage and Hour and Public Contracts Division, became effective this week.

The practical effect of the reorganization plan is to vest final authority for administration of the Fair Labor Standards Act and the Walsh-Healey Public Contracts Act in the Secretary. Congress refused last year to take wage-hour administration from the Administrator.

Reorganization Plan No. 6 was one of 16 plans, of a total of 21, which were permitted by Congress to become effective. Five plans were disapproved by the Senate:

Plan No. 1, dealing with the Treasury Department; Plan No. 4, giving the Secretary of Agriculture broad authority over USDA; Plan No. 7, relating to the Interstate Commerce

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In writing or telegraphing the National Canners Association's headquarters, address—

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Processing of Canned Foods

On Other Pages

FOOD PRESERVATION WITH ANTIBIOTICS—The text of a USDA release reporting research findings on the use of subtilin in food preservation, prefaced with a statement reporting similar experiments at the N.C.A. Washington Research Laboratory. See page 184.

PROCESSES FOR SPINACH—A complete table of processing times and temperatures for spinach and other greens in metal containers, for the immediate information of packers of these products. See page 184.

INSECTICIDES

Food and Drug Pesticide Tolerance Hearings

Following is a summary, prepared by Association Counsel and staff, of the proceedings at the FDA hearing on insecticide tolerances from May 15 through May 22, 1950.

Testimony at the Insecticide Tolerance Hearings during the week of May 15 was begun by representatives of the du Pont Company, who testified as to the uses of, methods of determination and residue data on methoxychlor, the dithiocarbamates and a new organic phosphate miticide called EPN.

Dr. Dietz, a du Pont entomologist, described the developmental procedures and tests to which du Pont subjects all of its new insecticides and fungicides prior to beginning commercial production. He named some of the fruit and vegetable insects which can be controlled with methoxychlor and also introduced residue data among which was the following: Residue on 4.5 ppm on Delicious apples 60 days after the last application; 8.6 ppm on beans after last treatment; 5.5 ppm on sweet cherries eight days after last application; 23.6 ppm on peaches 45 days after treatment; 2.0 ppm in one sample and 0.0 ppm in another on tomatoes one day after last of several applications.

C. J. Krister, a du Pont chemist, presented a complete statement of the chemical and physical aspects of methoxychlor. Dr. S. S. Sharp, an entomologist with the du Pont Company, described the biological aspects, uses, properties and available residue data on the miticide, EPN. EPN, the active ingredient of which is ethyl-p-nitrophenyl thionobenzene-phosphonate, has proved to be an effective control of the European red mite on apples and pears. Its residual action has extended up to five weeks, it has some ovicidal action and dosages as high as two pounds per 100 gallons did not produce any fruit injury. Other tests show that it is effective as a control of the Pacific and Willamette mite on apples, bud moth on prunes, and the two-spotted and clover mites on peaches. In preliminary tests, EPN has been effective in controlling the citrus red and citrus rust mite, the plum curculio, oriental fruit moth, European corn borer, onion thrips, orange tortrix and olive scale. EPN residue tests on apples, cherries, peaches, pears and prunes show that when applied at recommended concentrations at least 30 days prior to harvest, the resulting residues range downward from 0.5 ppm.

Dr. W. H. Tisdale, a plant pathologist, discussed the uses of fermate (ferbam) and zerlate (ziram) and gave residue data concerning them. Maximum residue of ferbam on apples was 2.55 ppm and 3.6 ppm on cherries. The maximum residue of ziram on green beans was 17.3 ppm, 0.9 ppm on cucumbers, and 2.4 ppm on tomatoes. A mixture of ferbam and ziram left residue of 14.3 ppm on whole celery plant of which 7.0 ppm was on the lower third and 33.4 ppm was on the upper third.

Another plant pathologist, Dr. B. L. Richards, discussed parzate (zineb) and parzate liquid (nabam) and gave residue data on them. Maximum zineb residues were 10.2 ppm on green beans, 3.9 ppm on cucumbers, and 1.7 ppm on tomatoes. Nabam maximum residues were 6.7 ppm on celery and 5.3 ppm on tomatoes. Dr. Richards also introduced data based upon experiments conducted at the Texas Agricultural Experiment Station which showed zineb and nabam to be outstandingly effective as controls of white rust and blue mold on spinach.

To conclude the du Pont presentation, Dr. R. S. Johnson discussed the chemical and physical aspects of the dimethyl dithiocarbamates (ferbam and ziram) and the ethylene bisdithiocarbamates (zineb and nabam), and Dr. G. Dragt presented analytical methods which can be used in making residue determinations on all the du Pont materials discussed. Methoxychlor residue can be determined by both the Fairing and the Schechter-Haller-Long modification of the Schechter-Haller method; EPN residue by the Averell-Norris, and total phosphorus methods and the dithiocarbamates by the Dickinson-Viles method.

The Rohm & Haas Company, manufacturers of rothane, dithane and karathane, was represented by three witnesses who testified on analytical methods, residue, and uses. Dr. F. B. Maughan said that karathane, formerly known as CR-629 and arathane, is a combination fungicide miticide which is an effective control of mildew, apple scab and European red mite on apples and mildew on peaches, cantaloupes and melons. It is not yet in commercial production, and there are no residue data on it yet. Dr. Maughan pointed out that because of the versatility of karathane its use could result in less over-all chemical residue on plants. He also introduced evidence that rothane did not cause off-flavor or odor when used on tomatoes. Dr. E. L. Stanley reported that the Schechter-Haller colorimetric analytical procedure was more or less specific for rothane (TDE) and DDT but does not distinguish between them. He said that all TDE residue tests on apples showed results of less than 5 ppm at harvest and that residue removal by washing with 5 percent HCL was negligible. TDE and DDT residues on tomatoes after two and three sprayings was 1 to 2 ppm. Washing had little effect on residue removal. Residues of the same materials on cabbage were 5.7 ppm immediately after spraying and 5.1 ppm after dusting. Three weeks later all residues were less than 0.1 ppm.

Dr. Stanley described a chemical method which could be used in making determinations for dithane. He reported a very detailed experiment in testing for the degradation products of dithiocarbamates and said that ethylene thiourea and thiuram disulfide were not among them. He also said that blanching celery in hot water would cause a 30 percent to 40 percent reduction of dithane residue over that on celery which was merely washed.

Dr. T. C. Allen testified for the John Powell Company, manufacturers of the insecticide, sabadilla. He said that it will control harlequins on cabbage, squash bugs and citrus thrips. Sabadilla's effectiveness is increased after it receives a heat or alkali treatment.

Dr. C. O. Persing of the Stauffer Chemical Company testified concerning the new acaricide R-242 (p-chlorophenyl phenyl sulfone). He said that it has shown effective control of the citrus red mite on orange trees, two-spotted mite on beans and of the European red mite, Pacific mite and clover mite. No specific analytical method for R-242 determinations has yet been devised, but the total chlorine method by ultraviolet spectroscopy can be used. No residue data is yet available on this experimental material, but residue and removal studies are now being carried out on apricots, prunes and pears.

Dr. T. W. Reed of the California Spray Chemical Corporation testified concerning BHC, lindane, phenyl mercury and a new fungicide, SR-406 (N-trichloromethylthio tetrahydrophthalimide), the trade name of which is orthocide 406. He said that experience has proved that of the various isomers in BHC, the gamma isomer is the toxic material and he stated it does not have off-flavor or odor giving qualities. This gamma isomer of a purity of not less than 99 percent is now manufactured and called lindane. Residue data on lindane are limited because no satisfactory analytical method has yet been devised. The tracer method which can be used in determining lindane residue in fat and milk has not yet been adapted to vegetables. Biological tests have shown that a lindane spray deposit volatilizes away in seven to 11 days. Odor and taste tests were conducted on lindane and BHC after applications of up to 100 pounds per acre, 20 times normal insecticide requirements. Immediately after their application to leafy vegetables, all materials tested could be tasted. Three weeks later

neither excessive nor normal applications of lindane could be detected. Beta and delta isomers did cause off-flavor which was particularly noticeable during cooking. Excessive dosages of lindane could be tasted in cooked and fresh fruits; normal dosages could not be. Excessive dosages of lindane were detectable in cooked vegetables; its effect on raw beans was questionable; normal dosages caused a lack of flavor rather than off-flavor on both edible legumes and root crops. The California Spray Chemical Company does not recommend the use of lindane on root crops but says that favorable results are obtained by its application to blueberries for weevil and mite control, for the spittle bug on strawberries, tomato aphids, by use on eggplants, peppers, cucurbits, spinach, celery, asparagus, cabbage and cole crops, thrips on onions, beans, peas and various seed treatments.

Concerning the new organic fungicidal spray SR-406, Dr. Reed said it is still undergoing experimental tests to determine its effectiveness. Apparently, it will control a wide range of fruit and vegetable diseases with no plant injury and with a high degree of compatability with other materials. One test for control of tomato anthracnose disclosed only 1.4 percent diseased fruit sprayed with SR-406, 3.6 percent in a combination zerlate parzate plot, 4.8 percent in a tribasic plot and 5.5 percent of diseased fruit in the check. Residue tests, using a Standard Oil Development Company analytical procedure, on apples, tomatoes, beans, cucumbers, eggplants, peppers and leaf lettuce have shown the following: After application of one pound per 100 gallons of actual SR-406, a residue of 1 to 7 ppm on harvested fruits and vegetables may be expected one week after treatment. No residue removal attempts preceded these tests.

Dr. Reed said that phenyl mercury acetate, sold as Tag Fungicide No. 331, is effective both as a protective and an eradicant fungicide. He introduced data to the effect that one pint of 10 percent phenyl mercury to 100 gallons of spray will control apple scab while one-fourth of a pint will not. The mercury residue found on apples several weeks after application is not water soluble. The amount of residue found following one preblossom, one petal fall and three cover sprays ranged from 0.0 to 0.2 ppm.

Phenyl mercury compounds were also discussed by Dr. Cohen and Dr. Sowa of the Gallowhur Chemical Company. Dr. Cohen reiterated Dr. Reed's statement that the mercury compounds are both protective and eradicants. Twenty-five states have approved their use for control of apple scab; they can be used as foliage sprays before development of apple fruit and as control of leaf curl during dormant stage on cherries, peaches and plums. He said that there are at least 12 available methods for organic mercury residue determination. Residue tests show that in some cases as much mercury residue is found on unsprayed plants as on the sprayed. Other tests show that puratized spray is unstable when exposed to light. Dr. Sowa discussed the chemistry of mercurial compounds and their degradation products.

Dr. Persing returned to the witness stand to discuss a new selective herbicide, sodium isopropylxanthate. In tests, this material, which possesses high water solubility, has controlled annual weeds in lima beans, peas and cabbage plots. No residue problem is indicated.

Dr. R. W. Towne of the Monsanto Chemical Company discussed the chemical properties of HETP and TEPP. He presented chemical and biological proof as to their high rate of volatility and concluded that no residue problem is presented. He also said that no satisfactory method for residue determination of HETP and TEPP has yet been developed but that bio-assay may be successful.

Dr. A. E. Griffiths of the Socony-Vacuum Oil Company discussed oil sprays as insecticides, how they are used, their chemical and physical properties and residues. He said that because of their high rate of volatility and purity of materials, no residue problem is thought to exist. Little residue data is available but the indication is that only traces of oil can be found in the rind of mature citrus fruit and no detectable amounts are in the edible portions or the juice.

The McLaughlin Gormley King Company was represented by two witnesses who presented testimony on pyrethrum, allethrin, selenium and a synergist, octacide 264 (N-octyl-bicycloheptene-dicarboximide). Dr. J. B. Moore said that pyrethrum is nontoxic to warm-blooded animals, is compatible with sulfur, the insoluble copper compounds, the arsenates, cryolite, DDT, nicotine, and rotenone, but is incompatible with alkaline materials. There is no known method of residue analysis which is accurate in the determination of pyrethrum in small amounts. Dr. Moore said that tests indicate that proper formulations of allethrin can be successfully substituted for pyrethrum in many instances. The witness also renewed the affirmative arguments for the need of selenium as an insecticidal control of Pacific mites, European red mites, Willamette mite and Bryobia mite on apple and pear trees and for the control of red spider and purple mite on citrus trees. He said that selenium is a necessary control for these mites because alternate materials cannot be used at certain stages of growth or under certain climatic conditions when mites must be controlled. Data presented show that the analytically detectable selenium residue on fruit from sprayed and unsprayed trees is usually about the same. In response to questioning, Dr. Moore said that New Zealand has established a tentative selenium residue tolerance of 0.5 ppm on apples.

Dr. A. A. Schreiber gave a brief statement in support of the domestically produced synergist, octacide 264. It gives some control of the ova of the red spider but its main use is as a synergist for pyrethrum and allethrin.

Dr. J. G. Sanders, who had previously testified concerning a nitroparaffin insecticide, gave a statement in support of BHC and lindane. He placed particular emphasis upon their use as a control of the plum curculio on peaches, catfacing insects and aphids on peaches and apricots.

Dr. R. C. Roark of the USDA presented a brief statement in support of the synergist, sesamin. It has particular value when used with pyrethrum in making a fly spray; as yet little or no insecticides containing sesamin is applied to fruits and vegetables. No sesamin residue data are available and an analytical method which is accurate in determining minute quantities is not yet known.

More testimony concerning allethrin came from W. H. White of the USDA and Dr. R. H. Wellman of the Union Carbide and Carbon Corporation. Mr. White said that allethrin (also known as "allyl homolog of cinerin I") is presently undergoing USDA field and laboratory tests for control of cabbage loopers, imported cabbageworm, diamond back moth larvae, pea aphid, Mexican bean beetle, vegetable weevil, asparagus beetle and beet leafhopper. Dr. Wellman said that his company is also putting allethrin through greenhouse and field tests with particular emphasis upon pea and bean aphids and bean leafhoppers on butter beans.

Mr. White's testimony completed the evidence presented under Part A.

Part B

The first witness under Part B, which dealt with chemicals named in Part A which are poisonous or deleterious to public health and for which tolerances must necessarily be established, was Dr. A. J. Lehman, Chief of the Division of Pharmacology of the Food and Drug Administration. Dr. Lehman introduced a list of chemicals which were divided as to those which present no health problem, those which are safe when properly used, those which do present health problems, and those which may present health problems. The complete listing under the different categories may be obtained upon request addressed to the N.C.A. Raw Products Bureau.

Dr. E. P. Laug of the FDA concluded the testimony under Part B. He gave a statement as to what poisonous or deleterious substances the consumer may be subjected to in his diet. He said that the daily arsenic

intake was probably between 0.1 and 0.5 milligrams per day.

Mercury occurs in nearly all plant and animal products; the range is from .01 to 0.1 ppm. Cadmium content ranges from 0.5 to 1 ppm in many foods; its presence may be due to contact with galvanized plating—the average intake is unknown. Lead is distributed in most plant and animal tissue; food intake is on the order of .32 milligrams daily. Selenium is widely distributed; it occurs in middle western soils up to 12 ppm. Grains may take up some of it; garden vegetables usually contain only traces. DDT may occur in flour meal, corn meal, corn grits, butter, lard, oleomargarine, bread, milk and human fat in varying amounts.

Part C

Part C of the hearing, consisting of evidence on the estimated average and maximum consumption per person of each of the fresh fruits and vegetables about which evidence was given in Part A, was covered with the testimony of only one witness, Mrs. Faith Clark of the Bureau of Human Nutrition and Home Economics, USDA. She reported on a 1948 food consumption survey which showed the fresh fruit and vegetable consumption of a number of families of all income groups in four cities of the United States.

Part D

The hearings then were recessed until July 10, at which time "testimony will be taken as to the quantity of each added poisonous or deleterious substance or combinations of such substances that can be tolerated on each such fresh fruit or fresh vegetable or on classes of fresh fruits and fresh vegetables without danger to public health, taking into consideration the other ways in which the consumer may be affected by the same or other poisonous or deleterious substances from other sources." This will be known as Part D of the hearings, and will include evidence to be presented by pharmacologists and physicians.

Dr. Lehman Classifies

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expected from their application to fruits and vegetables would constitute no health problem. He further defined what he considers to be the difference between "poisonous" and "deleterious," stating that the definition of the former would imply that any chemical which caused permanent damage and ultimate death to warm-blooded animals was considered poisonous whereas any chemical which created adverse physiological effects in the body of warm-blooded animals, without ultimate death, would be considered deleterious.

Group II—Dr. Lehman next classified a large group of chemicals which he said were known to be deleterious but which in his opinion created no public health hazard if they were used in the ways described by previous witnesses as constituting good agricultural practice. This group included most of the copper fungicides, oil emulsions, the botanical insecticides (nicotine, derris, rotenone, pyrethrum, sabadilla), zinc products, 2,4-D, and methoxychlor. Upon cross-examination by Food and Drug lawyers, Dr. Lehman stated that it may later be necessary to present further evidence under Section D of the hearings (having to do with the quantity of such added pesticides that can be tolerated) as to the average residue level of this group of chemicals when applied according to good agricultural practice in order to establish tolerance levels.

Group III—The next group of chemicals listed by Dr. Lehman included those substances which he considers to be poisonous or deleterious, or both, and he stated that residues from them on fruits and vegetables constituted a public health hazard. This group included most of the chlorinated hydrocarbons (such as aldrin, BHC, dieldrin, lindane, chlordane, TDE, DDT and toxaphene), most of the arsenicals, selenium, fluosilicates, mercury products, parathion, glyoxalidine, and most of the di-nitro compounds. Dr. Lehman felt that most of these products are likely to leave a residue as a result of commercial application and that in view of the significance of the public health problem a quantitative tolerance for each of these substances would be necessary for the protection of the public.

Group IV—Dr. Lehman further stated that most of the soil fumigants, although poisonous in nature, are usually applied in such a way that there is no uptake by the edible portion of the plant and that no public health problem would be involved in their use. This group included various cyanide products, carbon disulphide, tetrachloride, DD mixture, methyl bromide, PDB, chloropicrin and naphthalene. He did not include in this group BHC, lindane or chlordane which are sometimes used for soil insect treatments.

Group V—Those chemicals which are used as seed treatments, including the mercuries, zinc oxide, chloranil, and lindane were considered by Dr. Lehman to be no public health problem if they are properly applied.

Group VI—A large list of chemicals was not classified by Dr. Lehman into any of the previous groups because he said it was felt that insufficient information was available with respect to their health hazard to permit classification of them at this time. This list includes many of the new miticides and the carbamates (zerlate, fermate and dithane).

Dr. Lehman's testimony was followed by that of Dr. Laug, also of the Division of Pharmacology of the Food and Drug Administration, who discussed a number of chemicals such as mercury, cadmium, lead, selenium and DDT. A resume of his testimony, however, is included in the summary published in this issue of the INFORMATION LETTER, which summary also contains testimony presented by witnesses who appeared during the week of May 15 and that of the four witnesses who preceded Dr. Lehman on May 22.

Testimony under Part C of the hearings consisted of evidence on the weekly consumption of fresh fruits and vegetables of various wage groups during four seasons of the year in four cities given by Faith Clark, Bureau of Human Nutrition and Home Economics, USDA.

The hearings will be resumed on July 10 at which time Part D, or testimony on the quantity of such added pesticides and insecticides that can be tolerated will be presented, as determined by toxicological studies.

The complete classification of chemicals given by Dr. Lehman at the hearings has been mimeographed and is available to members upon request directed to the Association's Raw Products Bureau.

Reorganization

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Commission; Plan No. 11, reorganizing the Federal Communications Commission; and Plan No. 12, relating to the general counsel of the National Labor Relations Board.

Reorganization Plan No. 4 was rejected by the Senate after hearing arguments disapproving the transfer of the USDA extension service to the Secretary and criticisms of any reorganization which would give the Secretary unlimited authority to reorganize such activities as the Production and Marketing Administration and the Soil Conservation Service.

The House considered a resolution of disapproval of Reorganization Plan No. 6 but the vote of a constitutional majority of 218 Representatives necessary to defeat a reorganization plan was not obtained.

STATISTICS

Canned Fruit and Vegetable Stocks and Shipments

Reports on canners' stocks and shipments of canned apricots, sweet cherries, peaches, pears, corn, peas, green and wax beans, lima beans, and tomato juice have been compiled by the Association's Division of Statistics, and detailed reports have been mailed to all canners packing these items.

Canned Apricot Stocks and Shipments

	1948-49	1949-50
	(cases—basis 24/2½'s)	
Carryover, June 1	706,000	1,522,000
Pack	4,767,000	2,375,000
Total supply	5,473,000	3,897,000
Stocks, May 1	1,837,000	740,000
Shipments during April	315,000	214,000
Shipments, June 1 to May 1	3,636,000	3,157,000

Sweet Cherry Stocks and Shipments

	1948-49	1949-50
	(cases—basis 24/2½'s)	
Carryover, June 1	23,000	65,000
Pack	839,000	1,678,000
Total supply	862,000	1,743,000
Stocks, May 1	85,000	414,000
Shipments during April	34,000	75,000
Shipments, June 1 to May 1	777,000	1,329,000

Canned Peach Stocks and Shipments

	1948-49	1949-50
	(cases—basis 24/2½'s)	
Carryover, June 1	1,877,000	3,518,000
Pack	17,381,000	19,134,000
Total supply	19,258,000	22,652,000
Stocks, May 1	4,765,000	4,291,000
Shipments during April	956,000	2,515,000
Shipments, June 1 to May 1	14,493,000	18,361,000

Canned Pear Stocks and Shipments

	1948-49	1949-50
	(cases—basis 24/2½'s)	
Carryover, June 1	793,000	788,000
Pack	3,993,000	5,904,000
Total supply	4,786,000	6,692,000
Stocks, May 1	1,066,000	1,059,000
Shipments during April	332,000	517,000
Shipments, June 1 to May 1	3,720,000	5,633,000

Sweet Corn Stocks and Shipments

	1948-49	1949-50
	(actual cases)	
Carryover, Aug. 1	194,469	4,112,712
Pack	34,410,040	33,138,318
Total supply	34,604,509	37,251,030
Stocks, May 1	7,956,971	12,485,023
Shipments during April	1,973,450	2,210,050
Shipments, Aug. 1 to May 1	26,647,538	24,766,007

Canned Pea Stocks and Shipments

	1948-49	1949-50
	(actual cases)	
Carryover, June 1	7,809,928	4,955,141
Pack	24,446,054	24,944,874
Total supply	32,255,982	29,930,015
Stocks, May 1	6,376,343	3,268,079
Shipments during April	1,772,165	1,409,596
Shipments, June 1 to May 1	25,879,639	26,661,936

Green and Wax Bean Stocks and Shipments

	1948-49	1949-50
	(actual cases)	
Carryover, July 1	218,582	329,031
Pack	14,133,205	19,302,855
Total supply	14,351,787	19,631,886
Stocks, May 1	937,364	3,198,267
Shipments during April	581,299	824,931
Shipments, July 1 to May 1	13,414,423	16,433,619

Lima Bean Stocks and Shipments

	1948-49	1949-50
	(actual cases)	
Carryover, Aug. 1	.....	103,230
Pack	2,598,980	4,713,207
Total supply	2,598,980	4,816,437
Stocks, May 1	240,728	1,767,740
Shipments, Feb. 1 to May 1	394,585	857,715
Shipments, Aug. 1 to May 1	2,358,252	3,048,697

Tomato Juice Stocks and Shipments

	1948-49	1949-50
	(actual cases)	
Carryover, July 1	3,578,479	5,740,779
Pack	23,701,199	20,559,673
Total supply	27,279,678	26,300,452
Stocks, May 1	9,463,907	6,835,222
Shipments during April	1,429,039	1,226,168
Shipments, July 1 to May 1	17,815,771	19,465,230

Canned Baby Food Stocks

Details of the canned baby food supply, stock and shipment situation, as reported by the Association's Division of Statistics, are presented below:

	1949	1950
	(thousands of dozens)	
Canner stocks, Jan. 1	53,782	55,341
Pack, Jan. through April	33,537	32,572
Supply	87,319	87,913
Canner stocks, May 1	47,148	46,429
Canner shipments, April	9,747	10,162
Canner shipments, Jan. through April	40,171	41,484

1949 Cranberry Sauce Pack

The 1949-50 cranberry sauce pack amounted to 3,400,015 actual cases, as compared with the 1948-49 pack of 2,397,162 actual cases, it is reported by the Association's Division of Statistics. In the table below, the pack is shown by can size:

1949 Cranberry Sauce Pack

Can Size	Number per case	1948-49	1949-50
		(actual cases)	
211x206 (7 oz.)	48	25,446	66,163
300x407 (15-16 oz.)	24	2,188,131	3,135,422
No. 2	24	.....	65,000
No. 3 Cyl. (404x700) (52-54 oz.)	12	.....	1,425
No. 10	6	99,425	94,177
Miscellaneous tin	..	77,299	34,074
Miscellaneous glass	..	6,861	3,754
U. S. Total		2,397,162	3,400,015

PUBLICITY

Parade Magazine

The June 4 issue of the Sunday picture magazine *Parade* pictures a "Quick and Easy Bean Pot Dinner." The main dish of the meal uses canned kidney beans, canned luncheon meat, and canned applesauce. The food editor, Beth Merriman, introduces the article by saying:

"Perfect June weather is given us to enjoy. Flavorful food in cans and packages is given us to save kitchen time and labor. Make good use of them to conserve the golden hours of June for pursuits of pleasure!

"Less than an hour from can, or jar, to table—that's the story of a bean pot dinner. Set the sweet sour cucumbers in the refrigerator to chill; pop the beanpot in the oven; make the cornsticks. For dessert, serve ice cream."

Canned foods will again be featured in *Parade* in the June 11 issue. The article will stress the ease of preparing warm weather meals with a minimum of work and heat. Most of the meal featured consists of canned foods.

Article on Tuna

The house organ of The Procter & Gamble Company, *Moonbeam*, has published an article entitled "Out of the Deep," describing how tuna are caught, cleaned, and canned, with the addition of P&G edible oils.

The article appeared in the April issue. The 11,000 copies printed were distributed to Procter & Gamble employees, other companies, schools, libraries, and public institutions. Readership is estimated at 35,000.

Broadcast on 200 Stations

Miss Harriet Sabine of the Can Manufacturers Institute's Marketing Bureau discussed the canning industry on a transcribed program broadcast recently over 200 radio stations.

The 15-minute program was the initial broadcast of "Your Business Reporter," a series of special documentaries on business enterprise sponsored by the National Association of Manufacturers.

One of the facts pointed out in the broadcast is that four-fifths of the peas and sweet corn grown in this country go into cans and are thus available for eating the year around.

PROCESSING

Processes for Spinach or Other Greens in Metal Containers

On April 5, 1950, the N.C.A. Processing Committee on Foods in Metal Containers approved the following process suggestions for publication in the 7th Edition of Bulletin 26-L, *Processes for Low-Acid Canned Foods in Metal Containers*, scheduled for release during June, 1950.

The initial temperatures specified designate the average temperature of the can contents at the time steam is turned on for the process. Just prior to the start of the process, the contents of the container used for checking the initial temperature should be shaken or stirred and the temperature determined. This container should be representative of the coldest cans in the retort load and should have an initial temperature equal to or greater than the initial temperature specified. The initial temperature specified is to be regarded as a prerequisite minimum of the process suggested. If a can is closed at a temperature higher than that of the canning room atmosphere and is then held for some time in the room before it is processed, the contents will cool but the temperature at the center of the can may not be appreciably less than the closing temperature. It is for this reason that, from the standpoint of sterilization, the contents of the container should be stirred or shaken and the initial average temperature determined just prior to the start of the process.

Initial temperature should not be confused with closing temperature. Except when vacuum packing or steam flow closure is practiced, the closing temperature is the major factor influencing the final vacuum obtained in the cans and is an important consideration in preventing undue can strain or damage during processing and cooling. The closing temperature must be sufficiently high to satisfy these needs, and this will, in many instances, result in initial temperatures considerably above the minimum specified as a prerequisite to the processes listed.

Spinach or Other Greens

These cooks may not be adequate for the continuous cooker, and canners planning to use a continuous cooker should consult a laboratory connected with the canning industry.

Drained weight and net weight are of determining importance with spinach and other greens and must be controlled to ensure that the retort process will carry the intended sterilizing efficiency. The maximum drained weight given cannot be safely exceeded, and the net weight of contents should be at least that given for the respective can sizes.

Since blanched spinach tends to become stratified horizontally in cans larger than the No. 2, it is found that heat penetration is more rapid when these cans are processed on their sides rather than in a vertical position. Therefore the process is shorter for cans processed in a horizontal position.

Spinach or Other Greens

Can name	Dimensions	Retort temperature	Initial temperature	Time	Maximum drained weight	Minimum net weight
		Deg. F.	*Deg. F.*	*Min.*	*Oz.*	*Oz.*
8Z Tall	211x304	252	100	38	6.25	7.75
			120	37		
			140	35		
No. 1 (Picnic)	211x400	252	100	38	8.0	10.0
			120	37		
			140	35		
No. 1 Tall	301x411	252	100	40	11.5	15.0
			120	38		
			140	35		
No. 2	307x409	252	100	50	14.5	18.0
			120	48		
			140	45		
No. 2½ (horizontal)	401x411	252	100	55	21.0	27.0
			120	53		
			140	50		
No. 2½ (vertical)	401x411	252	100	62	21.0	27.0
			120	59		
			140	55		
No. 10 (horizontal)	603x700	240	100	105	66.0	100.0
			120	100		
		252	100	65	66.0	100.0
			120	60		
No. 10 (vertical)	603x700	240	100	140	66.0	100.0
			120	130		
		252	100	85	66.0	100.0
			120	75		

Food Preservation with Antibiotics

Recent reports in the scientific literature and the press (*Food Technology*, May 1950; *Food Processing*, February 1950; INFORMATION LETTER, January 7, 1950; *The Wall Street Journal*, May 2, 1950; *Baltimore Sun*, May 16, 1950, and others), have focused the attention of food technologists upon possible future uses of antibiotics in the field of food preservation.

If such uses should develop along practical lines, the canning industry would have the most prominent interest because the antibiotic would make unnecessary the high-temperature processes now used for the sterilization of low-acid vegetables and other low-acid products.

The first official information on this subject came from the Bureau of Agricultural and Industrial Chemistry, USDA, and appeared in a release dated December 29, 1949, which was reprinted, with limited comment, in the INFORMATION LETTER of January 7, 1950, page 2. The second release, reprinted below, reaffirms the statement that subtilin destroys organisms which are important in spoilage of canned foods, when the subtilin is supplemented by mild heat (212° F. or lower).

Complete reliability of this means of preservation depends upon destruction or complete inhibition of spores of spoilage organisms. Consequently, in appraising the safety of any early application of the principle of preservation by antibiotics, it is necessary to know how these substances act.

Following the release of December 29, 1949, from the Bureau of Agricultural and Industrial Chemistry, the Washington N.C.A. Laboratory obtained a small quantity of subtilin from that Bureau and undertook work to determine whether the antibiotic, supplemented by mild heat, caused spoilage spores to be killed or whether they were merely restrained from growth and still capable of causing spoilage in the event that the antibiotic should lose its potency or effect.

Work to date at the Washington Laboratory has been of an exploratory nature, but in the experimental program repeated observations have been made which create doubt that actual killing of spoilage organisms is accomplished by subtilin and mild heat. Minute quantities of this substance produce a remarkable effect in preventing spore development, but even after prolonged exposure to subtilin some spores have been found to be living. If these observations are confirmed, future work in this new field will have to be directed to determining means by which subtilin, or some other antibiotic, can be made actually destructive to the spores, or to causing their permanent inhibition.

On the basis of the experimental findings referred to and without reference to the supplemental questions of toxicity and compliance with legal food standards, it seems clear that no early application of antibiotic preservation can be expected.

The USDA release follows:

Research Shows How Antibiotic Kills Food-Poisoning Organisms

The microscopic plant called botulinus, potentially most lethal of food-poisoning organisms, can be killed in food products by minute amounts of the antibiotic subtilin, a U. S. Department of Agriculture scientist reported today (May 17).

Speaking before the Society of American Bacteriologists in Baltimore, Md., Dr. A. A. Andersen of the Department's Bureau of Agricultural and Industrial Chemistry presented this finding among other recent results of research in the new field of preserving foods with antibiotics. He described experiments in which subtilin, a bacterially produced microbe killer, destroyed botulinus spores (the "seeds" from which the organism develops) under conditions which would otherwise have made them grow and multiply rapidly.

The work reported was done by Dr. Andersen and Dr. H. D. Michener at the Bureau's Western Regional Research Laboratory in Albany, Calif. Their results indicate that subtilin is most effective against botulinus—a microorganism known scientifically as *Clostridium botulinum*—when its spores first begin to germinate.

This study of how subtilin attacks one of the organisms that contaminate food products is part of the California laboratory's continuing program of research on canning with antibiotics, a field of use for the so-called "wonder drugs" only recently opened to scientific investigation.

To destroy botulinus and other food-spoiling organisms, canners now cook their food products for 30 to 60 minutes or longer under pressure at temperatures above the boiling point of water. Scientists at the Western Regional Research Laboratory have found, however, that when tiny amounts of subtilin are added to canned foods they can be sterilized effectively by a milder heat treatment (at 212 degrees Fahrenheit or lower) in 5 to 10 minutes without pressure-cooking equipment.

The government researchers believe that this new canning method, besides helping canners to cut their processing costs, will improve the flavor and texture of many canned foods. This is possible because the usual long cooking at high temperatures can be avoided.

Canning with subtilin or other antibiotics, the scientists emphasize, is still in the early stages of development and will probably not be ready for commercial use any time soon. However, they regard their results to date as very promising. A number of food processors are interested in the new method.

Peas, asparagus, corn, green beans, peeled potatoes, precooked rice, fish, chicken, and mushrooms are some of the products that have been preserved satisfactorily with subtilin and mild heat in preliminary studies at the California laboratory. In a recent taste test, laboratory food experts found little or no difference in flavor between servings of cut corn preserved in this way and corn fresh from the field.

The process also offers a means of preserving foods that are not usually canned by ordinary methods. Examples are broccoli, cauliflower, and brussels sprouts. Regular canning makes these winter vegetables mushy and unattractive to consumers. But with subtilin and mild heat they can be preserved without losing their appetizing quality.

In the laboratory's tests to date, subtilin has been dissolved in a weak saline solution before being injected into cans of vegetables or other foods. Only very small amounts of the antibiotic are necessary. A ratio of about 20 parts of subtilin to a million parts of canned produce has been found adequate. This corresponds to less than 1 ounce of subtilin per ton of canned food.

Although researchers at the Western Regional Research Laboratory have tried a number of antibiotics and found several that might be usable in food preservation, subtilin appears so far to be the most satisfactory. This protein-like substance is produced in submerged fermentation (by a process similar to that used for penicillin) by a common bacteria, *Bacillus subtilis*. The antibiotic was first discovered by workers at the laboratory in 1944. It has several advantages for use in canning:

(1) It is effective against all spore-forming (heat resistant) bacteria or other organisms known to occur in food products;

(2) It keeps its germ-killing power better in the presence of heat than most other known antibiotics;

(3) It appears to be destroyed by enzymes in the human digestive tract and therefore is not likely to accumulate in the body; and

(4) After extensive tests with rats and limited tests with human patients, no evidence has yet appeared that the antibiotic is toxic when taken into the digestive system.

PUBLICATIONS

American Tomato Yearbook

The 1950 edition of the *American Tomato Yearbook*, containing information of interest to growers, dealers, shippers and canners of tomatoes and others in the tomato industry, has been published. It is edited by Dr. John W. Carncross of the Rutgers University College of Agriculture.

The yearbook contains information on control of tomato insects and diseases, picking, studies of costs and producing tomatoes for processing, and statistical data covering yield, acreage, and production. Much of the statistical material was supplied by the N.C.A. Division of Statistics.

Copies of the yearbook may be obtained for $2.00 a copy at 319 Scotch Plains Ave., Westfield, N. J.

Food Broker Services

A small business aid entitled *How Food Manufacturers Can Benefit From Food Broker Services* has been issued by the Small Business Division of the Office of Domestic Commerce, U. S. Department of Commerce.

The business aid reviews the food broker's function, compensation, advantages in using food brokers, and how to secure the greatest benefits from food brokers.

PERSONNEL

Reid Murdoch Ups Executives

A. T. Flynn, who for several years has headed the canned foods department of the Reid Murdoch Division of Consolidated Grocers Corporation, became president and general manager on May 1. He is a member of the N.C.A. Administrative Council and Finance Committee.

J. R. Keenan, president of Reid Murdoch for the last four years, fills the newly created executive position of chairman of the Reid Murdoch Division.

New Association Members

The following firms have been admitted into membership in the Association since April 8, 1950:

DEEPSOUTH PACKING CO., 1125 Girod St., New Orleans, La. *Factory*—Dulac. *Products*—Oysters, shrimp. *Officer*—Ray Skrmetta, owner.

J. H. HOEKZEMA CANNING CO., Box 1647, Anchorage, Alaska. *Factory*—Kasilof, Alaska. *Product*—Salmon. *Officer*—John H. Hoekzema, owner and manager.

KENAI PACKERS, 2615 Perkins Lane, Seattle 99, Wash. *Factory*—Kenai, Alaska. *Product*—Salmon. *Officer*—H. A. Daubenspeck, owner.

WEST COAST SEA FOOD CO., Tokeland, Wash. *Product*—Crabmeat, salmon, tuna. *Officer*—Charles M. Robison, owner.

WHITE-HALFERTY CANNERIES, INC., 512 Colman Bldg., Seattle 4, Wash. *Factories*—Cordova and Kodiak, Alaska. *Products*—Clams, crabmeat, salmon, tuna. *Officers*—Guy P. Halferty, Sr., president; Charles Alhadeff, vice president; Harold H. Horchover, treasurer; Ike N. Alhadeff, secretary.

FRED MUSHROOM PRODUCTS CO., Box 27, Lebanon, Ohio. *Products*—Mushrooms and mushroom products. *Officers*—Corwin S. Fred, owner and manager; Julius Fred, sales manager; Roland Johnson, superintendent.

SAC CITY CANNING CORPORATION, Sac City, Iowa. *Product*—Corn. *Officers*—Fred T. Hagan, president; Clark Hagan, secretary-treasurer.

WILSON PACKING CO., 1001 Westlake Avenue North, Seattle, Wash. *Product*—Oysters. *Officers*—C. L. Wilson, president; H. N. Sentz, secretary-treasurer.

CONGRESS

Clayton Act Amendment

The Senate Committee on the Judiciary on May 22 approved the House-passed bill, H. R. 2734, which would amend the Clayton Act by prohibiting the acquisition by one corporation of the assets of another corporation where the effect of such acquisition may be substantially to lessen competition (see INFORMATION LETTER of October 29, 1949, page 324).

Board and Dedication Schedule of Events

To assist members in their planning of trips to Washington to attend the Board, Council and Committee meetings or Dedication Ceremonies, or both, the following schedule of principal events is published.

Monday, June 5

1:30 p.m.—Joint meeting of Scientific Research and Washington Laboratory Committees, 2nd Floor Conference Room, New Building

6:30 p.m.—Buildings Committee, Dinner Meeting, North Room, Hotel Mayflower

Tuesday, June 6

9:30 a.m.—Budget Committee, Secretary's Office, New Building

10 a.m.—Washington Laboratory Committee, 2nd Floor Conference Room, New Building

11 a.m.—Administrative Council, Main Conference Room, New Building

2 p.m.—Procurement Committee, Library, New Building

6:30 p.m.—Labeling Committee, Dinner Meeting, North Room, Hotel Mayflower

7 p.m.—Association of Canners State and Regional Secretaries, Dinner Meeting, Pan American Room, Hotel Mayflower

Wednesday, June 7

9:30 a.m.—Board of Directors, Main Conference Room, New Building

12:30 p.m.—Board Luncheon (includes Administrative Council, Committee members and State Secretaries), Blue Room, Shoreham Hotel

2 p.m.—Board of Directors (afternoon session) — Blue Room, Shoreham Hotel

5 p.m.—Cocktail Party, home of Secretary and Mrs. Carlos Campbell, 1607 S. Arlington Ridge Road, Arlington, Va.

Thursday, June 8

All Day—New Building, 1133 20th Street, N. W., open for inspection by visitors

10 a.m.—Ceremonies in front of entrance to New Building where keys are turned over to President Henry P. Taylor

11 a.m.—Unveiling of oil portrait, Frank E. Gorrell, Main Conference Room, New Building

12:30 p.m.—Dedication Luncheon, Ballroom, Hotel Mayflower

PROCUREMENT

Exemption from Renegotiation

Two additions to the general classes or types of contracts and subcontracts which have been exempted from renegotiation by the Military Renegotiation Policy and Review Board and by the Secretary of Defense were noted in the *Federal Register* of April 28. Among these is an exemption for all subcontracts for items customarily purchased for stock in the normal course of the purchaser's business, except when such items are specially purchased for use in performing a contract or higher tier subcontract subject to renegotiation. Thus, any canner supplying a government supplier with food items for the purchaser's stock is exempted from renegotiation of these contracts of sale, whether or not the stock items are used in fulfillment of government contracts.

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